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for
Proposed South Beal Expansion
Beal Mountain Mining Operating Permit 00135
in
Silver Bow County, Montana

I. INTRODUCTION

This record of decision documents the Department of State Lands' decision to approve Beal Mountain Mining's (BMMI) South Beal Expansion, Amendment 002 to Operating Permit 00135. The South Beal Project is 18 miles west of Butte and 10 miles south of Anaconda. It is located on National Forest System lands administered by the Butte Ranger District, Deerlodge National Forest (DNF), Silver Bow County, Montana. The previously approved plans encompass a 1,202.2-acre permit area in T2N R10W sections 5,6,and 7 and in T3N R10W sections 31 and 32. Approximately 380 acres have been previously permitted for disturbance within the permit area.

The purpose of the proposed expansion is to mine approximately one million tons of ore from two small open pits located on the south side of German Gulch and within the existing permit boundary. The pits will be backfilled and reclaimed at the conclusion of mining. The South Beal project will add one year to the life of the mine and approximately 25 acres to the total disturbance.

An Environmental Impact Statement has been prepared by the Deerlodge National Forest and the Montana Department of State Lands pursuant to the National Environmental Policy Act (NEPA), 1969, and the Montana Environmental Policy Act (MEPA), 1971. The Final Environmental Impact Statement (EIS) describes the proposed actions and the alternatives to the proposed actions. It also describes the environment to be affected and discloses the potential environmental consequences of the operation. The EIS is on file and available at the Butte Ranger District in Butte, Montana, the Deerlodge Forest Supervisor's office in Butte, Montana, and the Department of State Lands' Office in Helena, Montana. This EIS was developed under the implementing regulations of the National and Montana Environmental Policy Acts (40 CFR 1500-1508, and ARM 26.2.-628-663, respectively), the Locatable Minerals Regulations (36 CFR 228), the National Forest Management Act, the Montana Metal Mine Reclamation Act (82-4-301, MCA, et seq.) and the Montana Water Quality Act (75-5--101, MCA, et seq.) and other applicable statutes.

II. ALTERNATIVES

Alternatives were developed in response to issues and concerns (see Section V, below) and analyzed to determine the effect of the project and to identify mitigation necessary to protect the environment. The alternatives are discussed in greater detail in the Final EIS, Chapter II and are summarized below.

Alternative 1 - BMMI's Proposal, The South Beal Project

Mining Plan and Methods

BMMI would access the two South Beal pits by the new main haulage road on the south side of the drainage. BMMI would build a 500- to 600-foot long access road from the haulage road to the pits. The final phase of the existing leach pad that was completed in 1992 is large enough to hold the South Beal ore. The permitted tonnage of ore on the heap would increase from 10 million tons to 11 million tons.

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Timber removal, soil salvage, and soil storage activities would be conducted as soon as the permit is issued. Mining would begin in the south Beal pits upon completion of these activities. Approximately 1,289,000 tons of waste rock and 959,840 tons of ore would be removed from the two open pits. Approximately 100,000 tons of potentially acid-neutralizing marble waste rock would be removed from the South Beal pits and stockpiled for capping of any areas with potentially acid producing rocks at the end of mining.

Ore from the South Beal deposit would be hauled to existing facilities at main Beal and processed. At the completion of mining in the first South Beal pit, waste from the second, larger South Beal pit would be used to partially backfill the first South Beal pit. Remaining waste needed to completely backfill both pits would come from the main Beal pit. Backfilling both pits with waste rock from the main Beal pit would bring the mined-out areas back to near original contour. Thus, the actual volume of waste to be placed in the existing waste rock facility would not be increased. Mining would be completed and backfilling and reclamation would begin in 1994.

To ensure continued pit stability, BMMI will 1) remove snow above the pit wall before spring thaw, 2) drill horizontal dewatering wells into the final pit slope before the winter of 1993-1994, and 3) construct a diversion ditch around the upgradient perimeter of the pit, if necessary to assure excessive water saturation does not occur in the pit walls. If either groundwater seepage or storm water were to become a problem in the pits during operations, an in-pit sump would be constructed and pumped. Water from this sump would be disposed of by sprinkling either on reclaimed portions of the waste rock dump or used for irrigation water during other reclamation.

BMMI's reclamation techniques, methods, and commitments from the original 1988 Beal reclamation plan would remain essentially unchanged. Reclamation would be completed in 1995. Post-reclamation land use of the South Beal area would be primarily wildlife habitat with site conditions suitable for development of a forest resource.

Under Operating Permit 00135, BMMI committed to mitigation measures to reduce impacts on air quality, hydrology, fish and wildlife and vegetation, including sediment and erosion control systems (Beal Mountain Mining Inc., 1988). These mitigation plans have been modified to include South Beal.

BMMI would monitor revegetation, soils, and water resources to determine success and evaluate modifications to the reclamation plan if necessary. The water resources monitoring plan currently used at BMMI (Beal Mountain Mining, Inc., 1988), would be used with the addition of nitrate to the indicator parameter list. Backfill material would also be tested to insure it would not cause acidification of the cover soil after reclamation. Similarly, waste rock used for haul road construction and for surface materials in the backfilled pits would be sampled for acid-base balance to ensure that acidification of soil does not occur.

BMMI has committed to mitigation measures if the heap ultimately produces acid drainage (Beal Mountain Mining, Inc., 1992a). Mitigation measures could include 1) controlling the amount of water entering and seeping through the heap through the addition of a cap of non acid-forming or alkaline material, 2) adding neutralizing capacity to the system by adding lime or phosphate rock, or 3) collection and treatment of seepage from the heap.

Alternative 2- The South Beal Project with Modifications

Modifications recommended by the agencies to BMMI's proposal include mitigating measures designed to reduce or eliminate environmental impacts not adequately addressed by BMMI and to increase company coordination with the agencies. The modifications listed under Section IV, Plan Modifications, will be incorporated by the agencies as conditions to the permit. All other aspects of BMMI's proposal, as discussed above, would remain the same.

Alternative 3 - No Action

Under this Alternative, BMMI would not develop the South Beal Project as proposed in their amendment to Operating Permit 00135. However, an approved plan of operations and operating permit exists which legally allows BMMI to proceed with mining on the main Beal Mine. Therefore Alternative 3 is also the existing condition.

Environmentally Preferred Alternative

The identification of the environmentally preferred alternatives is required by NEPA 40 CFR 1505.2 (b) and is authorized by MEPA under ARM 26.2.658(3)(d). The environmentally preferred alternative is the alternative which has the least impact of the physical and biological environment. Economic, social, technical and agency mission factors are not considered in the identification of this alternative. Alternative 2 is the environmentally preferred alternative. Alternative 2 contains numerous provisions to mitigate any potential effects that could result from mining, whereas Alternative 3, the No Action Alternative, would not permit any additional mining. Effects that were identified with the existing mine and relating to the cumulative effects sections would not be addressed here but would be addressed through corrective actions.

III. DECISION

The agencies have evaluated BMMI's proposal and determined the potential consequences. It is the my decision to select Alternative 2, the South Beal Project with modifications. Alternative 2 approves Beal Mountain Mine's South Beal Project amendment for mining two small open pits on the south side of German Gulch, with the additional mitigation measures listed in this document and discussed in the EIS.

This means that Beals' proposal to amend operating permit 00135 is approved with the conditions set forth in Section IV, below. In addition, BMMI must comply with the decisions of the DNF and the Department of Health and Environmental Sciences (DHES). All plans and commitments contained in the plan of operations and in conditions to operating permit 00135 remain in full force and effect except as specifically amended in the amended plan of operations and as specifically modified below. Only specific modifications are described here, followed by a short rationale in Section V.

Having evaluated the advantages and disadvantages of various alternatives, including the no action alternative, I have determined that Alternative 2 and the modifications (mitigation and monitoring conditions) described below allows for the mining of minerals while adequately providing for the subsequent beneficial use of the lands to be reclaimed and provides for the greatest reasonable degree of protection and reclamation to beneficial use as required by the Metal Mine Reclamation Act (MMRA). I have also evaluated BMMI's amended plan of operations in light of other statues and policies and determined that the application and plan of operations, as approved under MMRA, will not conflict with other agencies' decision-making authorities.

IV. PLAN MODIFICATIONS

Modifications which will be adopted as permit conditions include mitigating measures designed to reduce or eliminate environmental impacts not adequately addressed by BMMI, monitoring activities designed to verify the agencies' analyses and other conditions designed to increase company coordination with the agencies. The following modifications will be incorporated into the operating plan. All other aspects of BMMI's proposal will remain the same.

1. GROUND AND SURFACE WATER

a. REPORTING

BMMI must submit water quality monitoring reports from the South Beal upgradient and downgradient monitoring wells SBMW-1, -2 and-3: from surface water stations 3, 3a, and 4, and Spring 5; and from Blanket Collector Drains BCD and BCD-A to the DSL and DNF monthly during the mining of South Beal. The reports must be submitted in hard copy and in electronic format compatible with the STORET database, in order to facilitate independent trend analysis of the data. All other monitoring data must be submitted quarterly, in the same format used for South Beal monitoring. BMMI must monitor the two downgradient South Beal wells until prevention of long-term water quality degradation is assured.

b. WATER QUALITY MAINTENANCE PLAN TRIGGER/ACTION LEVELS

The following concentration limits apply to German Gulch surface water because of recent water quality changes in German Gulch and uncertainty of the causes of this degradation. These limits are protective of human health and aquatic life criteria. BMMI must meet these limits until or unless they are superseded by effluent limits imposed by an MPDES permit. In 1995, in-stream concentration limits must be reduced to 150 mg/L for sulfate, 300 mg/L for TDS, 1.0 mg/L for nitrate, and 0.1 mg/L for selenium. In 1998 this must be further reduced to 100 mg/L for sulfate, 250 mg/L for TDS, 0.8 mg/L for nitrate, and 0.006 mg/L for selenium.

Table 1--German Gulch Trigger Levels at Station 3

Parameter	*Trigger*	*1992 average/high conditions and Protected Criteria*
NO3+NO2 as N	*2.0 mg/L*	*3.37 mg/L (average), 5.3 mg/L(high) 1.0 mg/L total has been recommended as preventative of nuisance algal growth in certain streams; no appropriate NO3 has been established for German Gulch. The nitrate MCL is 10 mg/L.*
SO4	*200 mg/L*	*116.7 mg/L (average), 159 mg/L (high) 250 mg/L secondary MCL; B-1 stream classification*
TDS	*400 mg/L*	*260 mg/L (average), 367 mg/L (high) 500 mg/L secondary MCL; B-1 stream classification*
pH	*<6.5 or>8.5*	*7.88 (average), range: 7.76 to 8.03 secondary MCL; B-1 stream classification*
Cu(TRC)	*0.025 mg/L*	*0.006 mg/L (average), 0.008 mg/L (high) Approx. chronic aquatic life criteria (based on hardness of 240 mg/L at STA-3)*
As (TRC)	*0.025 mg/L*	*0.014 mg/L (average), 0.018 mg/L (high) 1/2 primary MCL (0.05 mg/L)*
Se (TRC)	*0.025 mg/L*	*0.020 mg/L (average); 0.027 mg/L (high) 1/2 current federal primary MCL of 0.05 mg/L (Montana MCL is 0.01 mg/L based on 1986 federal criteria).*

Effluent from springs 5 and 3 must be collected and diverted if Maximum Contaminant Levels (MCLs) are exceeded at these sampling sites. Further actions must be taken if downstream water quality exceeds certain trigger levels identified in Table I above. These conditions must be met at surface water monitoring site STA-3, and at all downstream monitoring stations.

If a trigger level is exceeded, BMMI must immediately notify the DSL and DNF in writing and must re-sample the affected site, as well as the immediate upstream and downstream monitoring stations. These samples must be submitted to the laboratory on a rushed analysis schedule, and the results sent to the agencies.

If any of these follow-up samples also exceed the trigger levels, then the following actions must commence.

a. All water from upstream degraded springs will be diverted, to channels of appropriate size, and either treated, used in the processing circuit, or land applied.

b. Sampling will be conducted weekly until water quality returns to within allowed limits for three consecutive weeks.

c. If a trigger level is exceeded at a site for a six week period, synoptic sampling will be conducted upstream to identify sources of degradation. DSL and DNF representatives will be provided opportunity to participate in this sampling.

d. Source control measures will be implemented. BMMI must propose appropriate source control measures within two weeks of receipt of synoptic sampling results. Appropriate measures may include, but are not limited to: spring diversion, source reclamation or capping, source removal, and installation of recovery wells.

e. If exceedance of water quality limits cannot be remedied and concentrations of parameters of concern continue to rise, BMMI must meet with the agencies to determine appropriate courses for further actions. If deemed necessary, these actions may include suspension of specific activities or complete treatment of German Gulch water.

c. DETECTION LIMITS

A detection limit of 0.005mg/L total and WAD cyanide must be used for all water quality sampling.

d. MONITORING SITES

The blanket collector drains (BCD and BCD-A) must be included in the monitoring plan.

2. BEST MANAGEMENT PRACTICES

BMMI must field review Best Management Practices (BMPs) with agency staff prior to ground disturbance. In addition to the BMPs included in the DHES stormwater permit, BMMI must implement the following BMPs for preservation of water quality:

. adjust fertilizer and mulch application practices to minimize nitrate and sulfate concentrations in runoff from reclaimed areas;

. minimize nitrate release by using BMPs which must include 1) a redundant blast initiation system, 2) monitoring blasts to ensure minimal amounts of explosives are used, 3) preventing, recording and cleaning up ANFO spillage, and 4) by ongoing training of mine and contract personnel;

. *provide final designs of South Beal postmining surface water drainage plans to the agencies for approval prior to final reclamation;*

. *install straw bales, diversions, slash filter windrows and other appropriate sediment control structures prior to ground disturbance; and*

. *survey cobble embeddedness and percent fine sediment in German Gulch.*

3. BIOLOGICAL MONITORING

a. BMMI must implement an aquatic biological monitoring program to assess the sites potentially affected by the mine. Since aquatic communities are dynamic in nature and are affected by environmental factors not related to mine activities, the site must be evaluated relative to instream control points or reference streams. The suitability of a reference stream must be evaluated by seven habitat criteria: 1) flow, 2) gradient, 3) elevation, 4) substrate composition, 5) aspect, 6) vegetative cover (canopy), and 7) major ion chemistry.

b. During the first year of collection, periphyton and aquatic macroinvertebrate samples must be collected in the spring (April), summer (July-August) and fall (September-October). Standard procedures for field and laboratory methods must be employed for macroinvertebrates (EPA, 1990), periphyton community composition (Bahls, 1993) and biomass (USGS, 1987) collection and analysis. In addition to standard statistical analyses, data must be evaluated bas~d on standard community metrics, such as, species richness, species composition, EPT: Chironomide, Hilsenhoff, and other measures of biological integrity (EPA, 1989). When appropriate, results must be compared to pre-mining conditions.

c. Biological monitoring must continue for the life of the mine. Biological monitoring must be conducted at three locations in German Gulch. One station must be located in the vicinity of Stations 3 and 3A; the second must be located in the vicinity of Stations 2 and 2A; and the final site must located on either Edwards or Greenland Gulch or Beefstraight or Norton Creek and must meet the criteria established under 3a, above.

4. LINER PERFORATION

BMMI may not perforate the liner under the heap until neutralization is complete and soiling has begun. BMMI must install horizontal dewatering wells into the low points in the collection sumps to prevent water build-up or must propose another plan that is equally effective in lowering the phreatic surface within the heap so that leaving the liner intact does not lead to stability problems. BMMI must monitor water quality until it is assured that appropriate Montana Water Quality Standards will be met in the long-term. The standards which must be met include, but are not limited to, maximum contaminant levels (MCLs) for nitrates, sulfates, arsenic, selenium and pH.

5. WASTE ROCK FACILITY MANAGEMENT

a. In order to reduce water infiltration into the waste rock facility, BMMI may not dispose of water from the South Beal pit sump onto the waste rock dump or use it for irrigation water. This water must be either returned to the processing circuit, used for dust suppression or treated by land application disposal or other appropriate methods. BMMI must sample pit sump water for extended analysis parameters (see Table ROD-1) prior to use for dust suppression or land application. Finals designs and water quality data for land application of pit sump water must be submitted for agency approval prior to implementation. Water not suitable for land application must be returned to the processing circuit or treated by other appropriate methods.

b. BMMI must monitor the interior of the waste rock facility for temperature, pore gas composition, and other parameters necessary to evaluate potential oxidation of iron disulfide. The indices of measure will include pH, pore gas composition, fluids composition, and interior temperature for the waste rock facility and static and kinetic test results. If monitoring of the waste facility indicates oxidation of iron disulfide as a source of sulfate, BMMI must implement a waste segregation program immediately. South Beal and main Beal neutral waste must be stockpiled and used for capping the waste rock facility, the backfilled South Beal pit, and possibly the heap leach pad if necessary.

c. BMMI must field test its proposed main Beal capping sequence to evaluate the effectiveness of capping layers to limit infiltration. BMMI must implement kinetic testing or field test plots as determined appropriate by the agencies. BMMI must submit data documenting the results of the field tests. If results indicate capping modifications are necessary, BMMI must submit a revision for agency review and approval.

d. BMMI must segregate waste and blend lime into the higher sulfide waste rock, if water quality parameters continue to deteriorate. If necessary to protect water quality, BMMI must cap the waste rock facility with an effective capping sequence to prevent infiltration into the waste rock facility.

6. WATER LEVELS IN GERMAN GULCH

BMMI may not reduce flows in German Gulch below those necessary to maintain the existing fishery.

V. RATIONALE FOR THE DECISION

In selecting Alternative 2, which allows mining to proceed with the addition of modifications to various elements of BMMI's proposal, several items were considered. These items include: comments received on the Draft EIS, consistency with the Deerlodge Forest Plan, and cumulative effects with the existing mine. Public Issues and concerns are discussed below in Subsection A. The responses to these issues and concerns and the rationale for each permit condition are summarized in Subsection B. The Remaining Subsections address the status of compliance with other applicable statues.

A. ISSUES AND CONCERNS AND PUBLIC PARTICIPATION

To identify significant issues and concerns related to the proposed project, a scoping meeting was held in Butte, Montana, in February 1992. In addition, letters were mailed to citizens and groups interested in activities in the project area, and written comments were solicited through a press release in the newspaper (Montana Standard, January 24, 1992). A legal notice which described the proposal was published in the Montana Standard (newspaper) for three consecutive weeks as required by DSL. The public comment period was held open until February 21, 1992. In addition to the public meeting and letters, BMMI conducted meetings with local individuals and groups to discuss the proposal and issued a news release describing the project.

A Notice of Intent (preparation of an EIS) was placed in the Federal Register on February 8, 1993. On March 16, 1993, the Draft EIS was issued. Notice of the release of the Draft EIS was listed in the March 26, 1993, Federal Register. The comment period concluded on May 10, 1993. Comments on the DEIS were received from the Mineral Policy Center, BMMI, the Montana office of the EPA, and the Montana Department of Fish Wildlife and Parks. The comments and DSL/DNF responses are presented in Chapter 5 of the Final EIS. Based on the comments received, additional analysis was conducted and included in the Final EIS where it was found necessary. A complete discussion of scoping concerns and participants is on file with the DSL and Butte Ranger District of the Deerlodge National Forest.

Major environmental issues included:

Ground and Surface Water Quality,
The Potential for Acid Rock Drainage, and
Wildlife.

Other issues that were considered but dismissed from further discussion include: cyanide in ground and surface water, cultural resources, fisheries, land use, seismicity, soil pH effects on revegetation, socioeconomics, and pit stability.

B. RESPONSE TO ISSUES AND CONCERNS

Responses to issues and concerns are summarized below. Responses generally fall into one of two categories: either further mitigation and monitoring requirements will be adopted or impacts were determined to be minimal to nonexistent and no further conditions will be adopted.

1. Ground and Surface Water Quality

With the permit conditions adopted above, there should be no adverse impact on the ground or surface water quality and aquatic ecology of German Gulch. Further, the effects of the main operations would be mitigated. Considerable study and analysis including detailed evaluation of the potential sources of nitrites, nitrates, nutrients, sulfates and other metals was undertaken to determine appropriate mitigation, monitoring and "Trigger Levels". BMMI is required to meet these trigger levels until or unless they are superseded by effluent limits imposed by an MPDES permit issued by the Montana Department of Health and Environmental Sciences. See condition 1.

Monthly submittal of water quality reports, as required under condition 1a has been adopted in order to analyze water quality trends in a more timely fashion during operation. This will also increase agency and company oversight of water quality concerns and allow the agencies and company to take immediate action if water quality problems develop.

Remediation of water quality impacts currently associated with main Beal operation must be pursued separately from the South Beal permit. Current degradation has resulted in elevated nitrate and selenium concentrations and source investigations have been initiated. Under condition 1b, interim trigger levels in Table 1 have been adopted and are intended to prevent further degradation. These trigger levels are higher than the "protected criteria" in column 3. The "trigger levels" in this plan must be revised as current water quality impacts are eliminated, to provide further assurance that the South Beal project does not contribute to degradation.

Copper and arsenic concentrations in the range of the trigger levels were occasionally detected during baseline data collection; such occurrences can be anticipated in mineralized areas. Baseline selenium concentrations were in the 0.004 mg/L range. Baseline sulfate and TDS concentrations at STA-3 averaged 32 mg/L and 122 mg/L, respectively. A baseline concentration of 0.89 mg/L nitrate + nitrate as N was reported at STA-3 in September 1987. Subsequent baseline nitrate samples for nitrate were less than the detection limit of 0.05 mg/L; therefore, the average baseline concentrations must be 0.24 mg/L. However, all baseline samples were collected during autumn months, in 1987 and 1988. More recent data collection has suggested that nitrate concentrations are higher in the springtime.

2. Best Management Practices

The requirement for best management practices, as defined under condition 2 has been adopted to minimize short- and long-term water quality impacts. Specific BMP's have been incorporated to address elevated nitrate levels.

The survey of cobble embeddedness, under this condition, will provide a relative evaluation of the effectiveness of best management practices used to date. In addition it will provide a long-term measure of water quality.

Although a discussion of specific BMP's for a Stormwater Permit were discussed in the EIS, those conditions were not required here because the Department does not have the authority to implement the Water Quality Act and establish conditions for Stormwater Permits.

3. Biological Monitoring

Biological monitoring of German Gulch is required under condition 3 to determine changes in abundance, community structure and function, reduction of taxa and dominance of the aquatic community by a few taxa as indicators of impairment of beneficial uses.

Under condition 3c, Station 4 will no longer be used as a biological monitoring site. Station 4 is on upper German Gulch and was originally selected for a water quality control site, however, due to elevated nitrate in ground water in the vicinity and sediment from various sources, this location cannot be used as a control site. Other possible locations for a control sites have been identified under this condition and include Edward Gulch, Greenland Gulch, Beefstraight Creek, or Norton Creek.

4. The Potential for Acid Rock Drainage

The rocks associated with the South Beal deposit are comprised of approximately 92% quartzite, 7% marble and the remainder diorite. Due to the presence of pyrite, pyrrhotite and iron disulfide, associated with the deposit, there is some potential for contaminant leaching to occur. Tests on these rocks indicated that some sulfate was initially released but eventually leveled off. The tests conducted (Acid Base Accounting, Ratio of Acid Neutralizing Potential and Acid-Base Accounting, and Kinetic testing using humidity cells for 15 weeks) indicated that the South Beal waste would not be acid producing. Acid generation is not expected from the South Beal waste for three principal reasons:

- *The neutralizing material (approximately 100,000 tons of potentially acid-neutralizing marble waste rock) could be utilized as a buffer for any acidic waters which filter through it,*
- *The South Beal pit will be sequentially backfilled and capped, if necessary, to reduce infiltrations, and*
- *Backfill material will be tested to assure that acidification of the revegetated soil layer does not occur.*

Successful reclamation of the South Beal pit area will decrease oxygen diffusion into the backfilled pit and will increase evapotranspiration which subsequently reduces infiltrations and seepage.

Kinetic testing for main Beal waste did not commence until May of 1993. Therefore, conclusions as to whether or not main Beal waste will produce contaminated leachate still cannot be made with absolute certainty. Under condition 5, above, BMMI will conduct a rock monitoring program which will allow the company and the agencies to better characterize waste from the main Beal deposit, as well as the South Beal deposit. BMMI has committed to address any concerns if the spent ore on the leach produces contaminated leachate (Beal Mountain Mining, Inc., 1992).

In addition, BMMI will monitor the interior of the waste rock facility to help distinguish potential sources for the existing sulfate concentrations in Spring 5. BMMI will also implement additional testing if the agencies determine it is necessary. BMMI will not be allowed to perforate the leach pad liner until protection of water quality can be assured (condition 4).

If oxidation of iron disulfide is found to be occurring in any mine facility BMMI will be required, if appropriate, to cap the facility at closure.

Under condition 5, BMMI is also required to test the capping plan submitted in its plan of operations, in order to assure its effectiveness.

5. Wildlife

Beal Mountain Mine has been in operation since 1988. The initial project affected approximately 450 acres of wildlife habitat. The effects ranged from removal of wildlife habitat (installation of the leach pad and related facilities) to more temporary forms of disturbance. The proposed project would expand the mine activity south of where it is presently located and involve an additional 25 acres disturbance.

Population levels of wildlife species will not be effected because of the limited area being disturbed (25 acres) and the mitigation measures currently employed by BMMI. Therefore no wildlife conditions have been adopted as a part of the approval to recover the South Beal deposit.

The USFS and the Montana Department of Fish, Wildlife and Parks will repeat baseline fish population sampling in 1993. In addition to fish population monitoring, sampling will include a species distribution survey in German Gulch Creek to document the upstream distribution of fish populations.

6. Engineering

The EIS identified engineering specifications for diversion and outlet structures. These specifications have not been adopted as permit conditions because BMMI has already incorporated these specifications into its plan of operations.

No conditions have been adopted which would apply to the existing heap. The 10 million tons of ore originally permitted does not represent the capacity of the leach pad, but rather the mass of ore reserves contained within the main Beal ore deposit above the elevation of German Gulch at the time the original permit was issued. The 10 million ton figure is related only to the proposed pit size in the 1988 mining application, not to heap stability or liner integrity. The ultimate capacity analyzed at that time was 11 million tons piled 75 feet high.

C. CONSISTENCY WITH THE FOREST PLAN

The DNF evaluated each alternative for consistency with the Forest-wide goals, objectives and standards presented in the Deerlodge Forest Plan. The Forest Plan ROD (page 8) states "All lands on the Deerlodge National Forest are available for entry unless formally withdrawn. Significant surface disturbing activities on mining claims, mill sites, and tunnel site locations will require a Notice of Intent and/or a Plan of Operations under 36 CFR 228 to assure orderly development of the mineral resource and protection of surface resources. Decisions on submittals for development will be formulated in compliance with NEPA and processed in a timely manner based on direction in the Plan, including standards identified in Management Area prescriptions..." If the proposal is reasonable and prudent, claimants have a right under the 1872 Mining Law to explore and develop their claim. All other applicable goals, objectives and standards are met in Alternative 2.

No other State or federal planning efforts are applicable to the proposed mine area.

D. CUMULATIVE EFFECTS

The cumulative effects of this project in conjunction with existing Forest Service activities and possible future activities were analyzed for each resource in the FEIS. The extent of this analysis was determined by the pattern of use for each resource, thus wildlife concerns covered a different area than water concerns.

It is reasonably foreseeable that more exploration and development activity may occur. Current exploration activities are focused around the north and eastern portion of the mine permit boundary from lower German Gulch towards American Gulch.

Future mine development is a possibility, but has been considered too speculative to evaluate, because it is dependant upon finding high quality reserves through exploration, as well as a number of other factors. No plans of operations are filed for any activity other than seasonal exploration. The magnitude of additional mining activities on area resources would depend on the scale and timing of future mine development. Because potential mining activity in the vicinity of the site is not proposed at this time, no similar, connected, or cumulative impact analysis for additional mining was conducted for this EIS. If a plan were submitted for additional mining, a complete environmental review would be conducted which would include the cumulative effects of past, present, and reasonably foreseeable actions.

E. WETLANDS

No wetlands exist in the South Beal project area.

F. THREATENED AND ENDANGERED SPECIES

A Biological Assessment of the effect of the project on threatened and endangered species found "no effect" on the grizzly bear, gray wolf, peregrine falcon, and bald eagle. The U.S. Fish and Wildlife Service concurred with the findings of the BA (letter dated February 11, 1993).

G. NOXIOUS WEEDS

BMMI has an approved Noxious Weed Management plan approved by the Silver Bow County Weed Control Board.

H. AIR QUALITY

BMMI has an air quality permit.

I. HARD ROCK IMPACT ACT

BMMI is in compliance with the Hard Rock Impact Act (HRIB, October 23, 1990).

J. CULTURAL RESOURCES

No cultural resources would be affected by the action (SHPO, April 28, 1992).

VI. INSPECTIONS AND MONITORING

The purpose of all monitoring is to verify the impacts analysis in the EIS, to identify impacts which may have been missed, or help refine needed corrective measures. Most monitoring would be done by the company. Verification of these results would be accomplished through inspections, and split and random sampling checks conducted by the agencies (refer to section I-2 in the FEIS on Agency Responsibilities). Results would be reported to the DNF, DSL, or to other appropriate agencies such as the Water Quality Bureau or Air Quality

Bureau. Based upon the agencies' analysis of monitoring information and inspections, monitoring requirements could be modified through the initiative of the agencies, or at the request of the company with agency approval. Monitoring could be increased, decreased, or different parameters added as impacts are evaluated and verified.

After the first complete year of biological sampling, BMMI and the agencies must determine the suitability of reference sites, sampling protocols and analytical procedures. Timing and the level of analysis may be adjusted on the basis of knowledge gained during the first year of analysis.

If inspections show that the approved plan is not being followed, enforcement actions will be taken by the agencies. Enforcement actions could include issuing noncompliance, fines and penalties, or other orders.

VI. APPEALS

The appeals process for this decision begins at the time the permit is issued. A permit will not be issued until the Department receives the bond, an update of ownership and control information and compliance information. Public notice of permit issuance will be distributed to local weekly and daily papers. Appeal of the permit may be filed in court within 90 days of permit issuance.

VII. CONTACT PERSON FOR MORE INFORMATION

For additional information or questions concerning this decision, or the appeal process, please contact the Hard rock Bureau of the Department of State Lands at 406-444-2074.

Arthur R. Clinch
Commissioner
Montana Department of State Lands

7/20/93
Date